

Storm, northeast warnings, were ordered for the northern Lake region on the evening of the 21st, and were extended to the balance of the upper lakes on the morning of the 22d. While some wrecks occurred during the month, and a few lives were lost, the warnings were generally heeded by vessel men, and sheltered harbors were sought.—*H. J. Cox, Professor.*

NEW ORLEANS FORECAST DISTRICT.

Frost, or special temperature warnings, were issued for some portion of this district on the 3d, 4th, 7th, 12th, 15th, 16th, 19th, 26th, and 28th. Frost occurred in each instance, and all frosts and freezes that occurred were forecast. The temperature warnings issued for the sugar interests on the 15th and 16th were fully verified. These warnings enabled all those who had not saved their seed cane to complete that work.

There were no well-marked storms during the month.—*I. M. Cline, Forecast Official.*

DENVER FORECAST DISTRICT.

The month was unusually fine, even in the mountain districts, where local storms so frequently occur at this season. Cold-wave warnings were issued on the morning of the 2d for Wyoming and northeastern Colorado, and these were verified except in the immediate vicinity of Denver.—*F. H. Brandenburg, Forecast Official.*

SAN FRANCISCO FORECAST DISTRICT.

The present month may be considered a wet November, the rainfall amounting to 3.48 inches, with ten rainy days and three days on which a trace of rain fell. The first week was marked by a pressure distribution approaching that of a typical dry month. This period marked the close of the raisin drying season. During this period no showers were forecast which did not occur, and no unnecessary warnings were issued.

On the morning of the 9th rain was forecast for southern California, and the forecast was verified. The disturbed condition on the California coast, which began on the 19th was anticipated. The p. m. map of the 18th showed the lowest pressure to be on the coast of northern California; the pressure and temperature change maps indicated on the morning of the 19th that the disturbance had moved northward, and on the 20th that it was in British Columbia and Alberta. Heavy rain which occurred in the vicinity of San Francisco on the night of the 20th was accurately forecast. The end of the month was marked by rainy weather, with conditions favorable for tule fog in the valleys and along the coasts.—*Alexander G. McAdie, Professor.*

PORTLAND, OREG., FORECAST DISTRICT.

The centers of storms, which controlled the weather in this district, passed farther north than usual; consequently the month was mild, and in most sections there was a deficiency of precipitation.

Many severe storms occurred on the Alaska and British Columbia coasts, and some of these storms passed far enough south to cause southerly gales along the Oregon and Washington coasts. Timely warnings were issued for all storms which visited the north Pacific coast, and shipping interests

were well advised of their character and progress.—*E. A. Beals, Section Director.*

HAVANA, CUBA, FORECAST DISTRICT.

No important disturbance appeared in the West Indies during the month.—*Montrose W. Hayes, Section Director.*

AREAS OF HIGH AND LOW PRESSURE.

Movements of centers of areas of high and low pressure.

Number.	First observed.			Last observed.			Path.		Average velocities.	
	Date.	Lat. N.	Long. W.	Date.	Lat. N.	Long. W.	Length.	Duration.	Daily.	Hourly.
High areas.										
I.....	2, p. m.	54	114	5, a. m.	48	85	1,325	2.5	530	22.1
II.....	4, a. m.	42	93	7, a. m.	42	76	1,050	3.0	350	14.6
III.....	5, p. m.	45	123	8, p. m.	38	80	2,350	3.0	783	32.6
IV.....	8, a. m.	54	114	11, a. m.	43	74	2,550	3.0	850	35.4
V.....	10, p. m.	45	123	13, a. m.	33	94	1,400	2.5	730	30.0
VI.....	13, a. m.	53	108	18, a. m.	48	85	1,300	18.0	433	18.0
VII.....	17, p. m.	47	123	22, a. m.	36	75	3,350	4.5	722	30.1
VIII.....	18, p. m.	50	108	23, a. m.	36	75	2,125	3.5	607	25.3
IX.....	20, p. m.	53	105	24, p. m.	46	60	2,220	4.0	555	23.1
X.....	23, a. m.	30	99	25, p. m.	25	82	1,400	2.5	550	23.3
XI.....	23, p. m.	53	108	27, p. m.	48	85	1,125	12.0	562	23.4
XII.....	24, p. m.	43	109	27, a. m.	35	85	1,425	2.5	570	23.8
	26, a. m.	50	100	29, a. m.	34	78	1,750	3.0	583	24.3
Sums.....							26,120	42.0	8,542	360.0
Mean of 14 paths.....							1,866		617	25.7
Mean of 42.0 days.....									620	25.8
Low areas.										
I.....	1, a. m.	51	114	3, p. m.	47	85	1,535	2.5	610	25.4
II.....	2, a. m.	38	108	3, p. m.	36	85	1,075	1.5	717	29.9
III.....	5, a. m.	50	120	4, a. m.	28	82	1,425	2.0	712	29.7
IV.....	7, a. m.	53	117	9, a. m.	48	54	3,425	4.0	856	35.7
V.....	8, a. m.	33	105	9, a. m.	26	97	2,975	4.0	744	31.0
VI.....	9, a. m.	50	120	18, a. m.	48	54	4,450	9.0	950	39.6
VII.....	14, p. m.	41	126	17, p. m.	53	105	1,500	3.0	500	20.8
VIII.....	16, a. m.	43	105	19, p. m.	28	82	2,050	3.5	586	24.4
IX.....	18, p. m.	41	126	20, a. m.	48	125	600	1.5	400	16.7
X.....	20, p. m.	48	110	26, p. m.	46	60	3,525	6.0	588	24.5
XI.....	23, a. m.	50	120	24, a. m.	49	90	3,950	6.0	658	27.4
XII.....	26, a. m.	53	121	29, p. m.	42	74	1,400	2.0	700	29.2
XIII.....	29, a. m.	53	121	*3, a. m.	48	54	2,600	3.0	867	36.1
				*5, a. m.	46	54	3,200	4.0	800	32.3
							4,725	6.0	788	32.8
Sums.....							39,375	59.0	10,970	457.1
Mean of 16 paths.....							2,461		686	28.6
Mean of 59.0 days.....									667	27.8

* December. † Stationary for 2 days.

For graphic presentation of the movements of these highs and lows see Charts I and II.—*H. C. Frankenfield, Forecast Official.*

RIVERS AND FLOODS.

Low water stages continued during the month in the Mississippi and Missouri rivers. In the Ohio low stages continued until the last week of the month, when a steady, though not heavy, three days rainfall caused a moderate rise in the upper river and tributaries, the crest passing Portsmouth, Ohio, on the 30th. This rise was of the greatest value to all river interests. Thirty hours advance notice of the coming tide was given by the Weather Bureau Official at Pittsburg, and every effort was made by those affected to take immediate advantage of the situation. The coal industry was the one most benefited, since about five million bushels of coal were started on their journey to the mouth of the Mississippi River.

The rivers of the remaining districts of the country pre-